8 Gulf of Alaska Northern Rockfish (Executive Summary)

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November 2004

8.0 Introduction

This is the first year of the new biennial stock assessment schedule for the Gulf of Alaska. The new schedule allows stock assessment authors to make two year projections of ABC and OFL and allows stock assessment authors to update those two year projections during each annual stock assessment cycle. The GOA northern rockfish assessment will likely go to a two year assessment cycle with new assessments made coinciding with the availability of new biennial bottom trawl survey biomass estimates. Since this is the first year of the two year stock assessment schedule and a non biennial survey year, the GOA northern rockfish assessment for this year will be based upon last year's assessment model (the last year with a biennial survey biomass estimate) with updated catch. A full assessment will be completed next year to coincide with the next available biennial survey biomass estimate.

New data for this year include updated catch for 2003 and 2004. Catch in 2003 and 2004 approached 97% and 98 % of the TAC respectively. With Gulf rationalization looming, it is likely that the commercial fishery will extract full value from the northern rockfish fishery.

Year	Catch (mt)	TAC (mt)	% of TAC
2003	5,343	5,530	97%
2004	4,763	4,870	98%

8.1 Summary of Major Changes

The GOA northern rockfish assessment recommended for this year uses last year's age structured assessment model with updated catch for 2003 and with a preliminary catch estimate for 2004. There were no other changes made to last year's assessment model (Courtney et al. 2003, http://www.afsc.noaa.gov/refm/docs/2003/GOAnorthernrf.pdf). Model parameters were re-estimated and exploitable biomass, female spawning biomass, and yield were projected ahead two years (2005 and 2006). There was an increase in 2005 projected biomass and ABC relative to last year's assessment without updated catch. This was the result of model formulation, which does not estimate fishing mortality independently each year. Consequently catches in all years, including 2004, influenced model parameter estimation of fishing mortality and selectivity and resulted in a slightly higher estimate of total biomass.

For the 2005 fishery, we recommend that the ABC for northern rockfish in the Gulf of Alaska be set at 5,093 mt from the updated model. This ABC is slightly larger than last year's ABC of 4,874 mt. The corresponding reference values for northern rockfish are summarized below.

Projected spawning biomass in 2005 B_{2005} is 38,272 mt. $B_{40\%}$, determined from average recruitment of the 1977-95 year-classes is 24,693 mt. Since B_{2005} is greater than $B_{40\%}$, the computation in tier 3a [i.e., $F_{ABC} <= F_{40\%}$] is used to determine the maximum value of F_{ABC}. As in last year's assessment, we recommend that $F_{40\%}$ be used as the basis for ABC calculations. Based on the definitions for overfishing in Amendment 44 in tier 3a (i.e., $F_{OFL} = F_{35\%}$=0.068), overfishing is set equal to 6,050 mt for Gulf of Alaska northern rockfish. The overfishing level is not apportioned by area for Gulf of Alaska northern rockfish. As projected in last year's assessment, northern rockfish are not overfished and are not approaching an overfished condition.

	Last year's assessment projected without updated catch		This year's assessment projected with updated catch	
	2004	2005	**2005***	2006
$B_{40\%}$ (mt)	23,929	23,929	24,693	24,693
Female Spawning Biomass (mt)	36,482	34,499	38,272	36,108
$F_{50\%}$	0.040	0.040	0.040	0.040
Projected Yield at $F_{50\%}$	3,468	3,267	3,623	3,378
$F_{40\%}$	0.057	0.057	**0.057**	0.057
F_{ABC} (maximum allowable = $F_{40\%}$)	0.057	0.057	**0.057**	0.057
ABC (mt, maximum allowable)	4,874	4,592	**5,093**	4,749
F_{OFL} ($F_{35\%}$)	0.068	0.068	**0.068**	0.068
OFL (mt, $F_{35\%}$)	5,790	5,455	**6,050**	5,642

*** Recommended for ABC determination**

8.2 Area Apportionment

The apportionment percentages are identical to last year, because there is no new survey information. The following table shows the recommended apportionment for 2005.

Area	Western	Central	Eastern	Total
Area Allocation	15.87%	84.10%	0.03%	100%
Area ABC (mt)	**808**	**4,283**	**2**	**5,093**

For management purposes, the small ABC of northern rockfish in the Eastern area is combined with other slope rockfish.

8.3 Responses to SSC Comments

Last year's northern rockfish assessment cited a study of the northern rockfish fishery for the period 1990-98 which showed that an estimated 89% of the catch was taken from just five relatively small fishing grounds: Portlock Bank, Albatross Bank, an unnamed bank south of Kodiak Island that fishermen commonly refer to as the "Snakehead", Shumagin Bank, and Davidson Bank. In particular, the Snakehead was the most important fishing ground, as it accounted for 46% of the catch during these years. The SSC has requested examination of this fishery feature to determine if there is any biological significance. The Auke Bay Laboratory has initiated research on benthic habitat mapping of commercially important fishing grounds in the Gulf of Alaska. Six study areas were identified: The Snakehead, Albatross Bank, and Portlock Bank in the Central Gulf, and Pamplona Spur, South Yakutat, and Cape Ommaney in the Eastern Gulf. These study areas were mapped with high resolution multibeam bathymetry and calibrated backscatter. Geological habitat types are being identified from the multibeam maps and in some cases cross-referenced against video available from submersible transects. Identified habitat types will be compared with NMFS survey and fishery catch data by species and geographic location of the catch in a Geographic Information System (GIS) to identify species or fisheries impact associations with habitat types. This work is ongoing and results from a pilot study of Portlock Bank are in preparation as a manuscript.

The SSC has requested that additional analysis be provided on the possibility of localized depletion in rockfish stocks. These analyses will be conducted for the next full stock assessment cycle in 2005. In conjunction with these analyses, we will examine the data requirements for potentially disaggregating ABC'S in the future.